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ABSTRACT

Reading skills in a Midwestern suburban school are poorly developed. Evidence of the problem includes test scores, students' inability to read directions in text as reported by the teachers of the school, and oral reading performances by the students. This action research study describes methods for increasing active strategic reading as an intervention. The targeted population consisted of students in a second-grade regular education classroom and a self-contained first- through fifth-grade cross-categorical special education classroom. Through published literature, educational leaders and researchers suggest a number of probable causes. The "whole language" trend with lack of phonics instruction, and phonics instruction in isolation has been reported to be a contributing factor. Absence of early reading experiences, limited individual instruction in schools, lack of understanding and use of multiple reading strategies, and socioeconomic influences were also found to be contributing factors. Through a review of literature containing solution strategies, the researchers concluded that instruction in the mechanics of reading is key to improving students' reading levels. With the support of these findings, the researchers developed an intervention plan designed to increase the number of reading strategies used by the targeted students. Specifically, the goal was to increase students' awareness of onsets and rimes, their use of context cues, and their use of picture cues. The components of the intervention program included assessment tools for pre-intervention testing and post-intervention testing. Instructional tools were selected from published words, or designed by the researchers to obtain the goals set. Post-intervention data indicated an increase in reading skills. Through analysis of data collected, the researchers concluded that this was attributed to the students' application of reading strategies learned during the intervention period. (Contains 26 references, 8 tables, and 8 figures of data. Appendixes contain a phonics inventory, worksheets, and checklists.) (Author/RS)

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INCREASING ACTIVE STATEGIC READING IN BEGINNING READERS

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An Action Research Project Submitted to the Graduate Faculty of the

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ABSTRACT

Reading skills in this Midwestern suburban school are poorly developed. Evidence of the problem includes test scores, students' inability to read directions in text as reported by the teachers of the school, and oral reading performances by the students. This action research study describes methods for increasing active strategic reading as an intervention. The targeted population consisted of students in a regular education classroom and a self-contained cross-categorical classroom.

Through published literature, educational leaders and researchers suggest a number of probable causes. The "whole language" trend with lack of phonics instruction, and phonics instruction in isolation has been reported to be a contributing factor. Absence of early reading experiences, limited individual instruction in schools, lack of understanding and use of multiple reading strategies, and socioeconomic influences were also found to be contributing factors.

Through a review of literature containing solution strategies, the researchers concluded that instruction in the mechanics of reading is key to improving students' reading levels. With the support of these findings, the researchers developed an intervention plan designed to increase the number of reading strategies used by the targeted students. Specifically, the goal was to increase students' awareness of onsets and rimes, their use of context cues, and their use of picture cues. The components of the intervention program included assessment tools for pre-intervention testing and post-intervention testing. Instructional tools were selected from published words, or designed by the researchers to obtain the goals set.

Post-intervention data indicated an increase in reading skills. Through analysis of data collected, the researchers concluded that this was attributed to the students' application of reading strategies learned during the intervention period.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The reading skills including semantics, decoding, syntax, and fluency of the target students are poorly developed. Evidence of the problem include test scores, students' inability to read directions in text, and oral reading performances by the students.

Immediate Problem Context

Two classrooms, housed in the same school building, will be the targeted populations that will be used in this research. The first classroom will be identified as Site A, and the second as Site B.

Classroom Sites

Site A is a regular education second grade classroom. The class is comprised of 10 girls and 13 boys. The amount of children receiving speech services is 13%. The classroom teacher has experience in pre-kindergarten, first grade and second grade education.

Site B is a first through fifth grade cross-categorical special education classroom. There are 9 children. An aide provides assistance within this setting. Students are mainstreamed into the regular classes of art, music, and physical education. The teacher has seven years of experience in this field.

The School

The school in which this study is being conducted was constructed in 1969. It has an enrollment of 456 students. Based on a September, 1996 report, 67.5% of the children are White, 27.6% Hispanic, 3.3% Asian/Pacific Islander, 1.1% Native American, and 0.4% Black. In comparison, the district's racial-ethnic background reflects 73.8% White, 21.8% Hispanic, 3.4% Asian/Pacific Islander, 0.5% Black, and 0.4% Native American.

The school's attendance rate is 95.5%. School attendance reports indicate 0.0% truancy. However, teachers have reported concerns regarding extended family vacations in other countries.

The mission statement of the school in which this study takes place is "to develop all students into becoming life-long, self-directed learners, problem solvers, and effective communicators. We are committed to developing the students into goal setters and quality producers. Our children will be equipped with collaborative working skills and value becoming contributors to their community" (School Report Card, 1998).

To achieve the goals stated in this mission statement, the school provides a relatively low classroom size. There are eighteen regular self-contained classrooms. The average classroom size is nineteen. The support staff includes members who indirectly influence the educational development of the students. These would include the assistant principal, school secretary, nurse, lunchroom supervisors, and three custodians.

Support staff involved in direct influence of educational development are numerous. A resource teacher provides assistance to students with learning disabilities within an inclusionary setting. Individualized attention is also provided through a "pull-out" method. Students having more academic and behavioral needs are serviced in a cross-

categorical classroom and in a multiple needs class. There are six aides in the building whose roles vary from whole classroom assistance to individualized instructional support. Speech and language services are provided by a language pathologist.

The special education cooperative provides support through its psychologist, behavior management team, vision and hearing itinerant, and physical therapist. To better serve our students, this cooperative provides training to the school staff. In addition, these staff members play an active role in the teacher assistant teams. This team aides the teacher in developing remedial education plans. Upon intervention and review of these plans, a student may or may not be recommended for a case study evaluation.

The school employs a social worker to counsel students in an individual or small group setting. Additionally, services are provided in a whole classroom environment when requested by a classroom teacher.

With an increasing number of students who don't speak English, a full-time bilingual teacher provides instruction in a small group setting. Emphasis is placed on language acquisition and the understanding of grade level material. This teacher plays a vital role in maintaining home-school communication. Many of the parents of these children do not speak English in the home.

Finally, the students' literacy skills are supported by the Title One/reading specialist. This teacher provides services through one-to-one contact, small group instruction, whole class intervention, and teacher inservice.

The academic program of this school is designed by teacher committees guided by the principal. The reading committee recently adopted a new literature-based curriculum

supplemented with a phonemic component. This reading approach will be implemented in the upcoming school year.

Minutes spent in instruction for all core subject areas meet state requirements. Music, art, and physical education instruction are provided by their respective teachers. One classroom is shared by music and art, while the lunchroom also serves as a gymnasium. Students from each class are rewarded monthly for excellent effort in physical education class.

Many educationally supportive programs are available to the students. The school participates in the D.A.R.E. program at the fifth grade level. Appropriate social skills are also facilitated across grade levels by fifth grade mediators. The fifth graders are also responsible for the publication of the monthly school newsletter.

"Wee Deliver" is a program designed to encourage student writing. It is similar to the U.S. Postal service. Each classroom is assigned a fictional street name. Each student is given an address. A directory of all students and staff is printed. Students write letters to other students and staff, and the letters are delivered by student mail carriers.

A gifted program is directed by the school principal. Eligibility is determined by a psychological evaluation. Teacher recommendation initiates this process. Instruction is provided by the media center director with emphasis placed on computer literacy.

In the third quarter, teachers make recommendations for summer school. Enrollment is ultimately at the discretion of the parents. The program is run in conjunction with the park district, combining academic and recreational activities.

In terms of technology, each classroom is equipped with a computer with access to the Internet. Video monitors were recently installed throughout the building. They provide

classroom teachers accessibility to video, laser discs, and computer display. The media center is also furnished with a computer lab that accommodates a classroom of thirty students.

The School District

The school district is approximately five miles in size. Total enrollment of the four schools is 1200. An early childhood center services at-risk children between the ages of three and five. Children in grades kindergarten through five attend the two elementary schools. Additionally, there is a junior high school for sixth, seventh, and eighth grade students.

The district also offers a program for parents of children aged birth to three years old. This is a state funded program called Parents' as Teachers. A parent educator provides parents with information of child development appropriate to the child's age.

This district has been awarded the Bright Red Apple Award for the third year in a row. A firm called School Search nominates districts for academic performance, pupil-teacher ratio, expenditure per pupil, and educational level of teachers and average salary.

The student-teacher ration is 19:1, and the per pupil cost is $5,882. The average teacher salary is $41,849 with 47.1% holding master's degrees. Average teacher experience is 13.4 years. The average administrator salary is $89,544.

The Surrounding Community

Once undeveloped farmland, the community has grown to be home to major corporations including Motorola, Mitsubishi, and NEC. The build-up of the industrial business parks is in part due to the city's close proximity to one of the nation's largest airports as well as a network of tollroads and freeways. The population of the community,

measuring six point two square miles, is 12,425. The population is 90.6% White, 6.8% Hispanic, and 2.6% defined as "other". The median family income is $56,699, and 7.6% of the population have a household income below $15,000. Eighty-three percent of the homes are single-family units, and 7.6% are comprised of multifamily units. The median age of residents is 37.0 years, and the average years of school completed is 12.8 (Internet).

Residents of the community have access to a public library. It is located across from the local park district. The park district provides many year-round recreational activities for all age groups. It also works closely with the school district to help design summer school programs to meet the needs of the working parents. In addition, there are two child-care facilities in the town.

Places of worship include an Inter-Denominational church, a Methodist church, a Baptist church, two Lutheran churches, a Buddhist church and a Roman Catholic church. The Roman Catholic church houses the community's only private school. This school has an enrollment of 223 students. The school services students in kindergarten through eighth grade. The public school works cooperatively with the private school in terms of special educational needs.

Of the residents, 72.0% are employed, 2.5% are unemployed, and 25.5% are not in the labor force. The majority of those employed hold managerial or professional positions. This is 25.5% of the employed population. Additional occupations include technicians with 2.5%, sales with 15.1%, administrative support with 21.1%, service with 9.6%, agriculture with 0.2%, craft repair with 12.6%, factory with 6.7%, transportation with 2.9%, and helpers, laborers with 3.8% (Internet).

Residents have the opportunity to become involved in several clubs and organizations. These include the Lion's Club, the Lioness Club, the American Legion, the Knights of Columbus, the Boy Scouts, the Girl Scouts, baseball, football, a garden club, and a homeowner's association.

National context

The concern for poorly developed reading skills exists not only in the context described, but also in a national context. It is proposed that there is an 85% chance that children will not learn to read properly (Flesch, 1981).

In 1975 an Adult Performance Level Study was done at the University of Texas. One hour interviews of 7,500 United States adults were conducted nationwide. The house-to-house survey was done by the well-known polling firm called Opinion Research Center of Princeton, New Jersey. The questionnaire used consisted of forty items dealing with functional competencies considered important to success as adults. Twenty-one point seven percent of all U.S. adults between the ages of 18 and 65 could not correctly answer questions such as: "If the label on a medicine bottle says, 'Take two pills twice a day, how many pills should you take in one day?'" (Flesch, 1981). Another sample was "A government brochure about termites says, 'No matter what protective measures you take, periodic inspection should be made at least every six months if you live where termites are common.' You live in such an area. How often should you have your house inspected?" (Flesch, 1981).

Another testament to the national concern regarding the literacy problem of our Nation's children, is the 1997 America Reads Challenge Act. The goal of this legislation is to support schools and families in the task of teaching all students to read independently

and well by the end of third grade. The proposed dollar amount allocated by this legislation is $2.75 billion (Wasik,1998).

A number of programs have been initiated and implemented across our Nation to improve reading abilities of our schools' children. Reading Recovery is a tutoring program targeting at-risk first graders. This program is used in more than 6,000 U.S. schools. Approximately 800 high-poverty schools use Success for All, another tutoring program, for lowest achieving first, second, and third grade children. This model also focuses on staff and curriculum development, and support services for families. The Howard Street Tutoring Program was established in 1979 and is still currently in existence. Similar to the two previous programs, this tutoring program provides services to second and third grade students who struggle with reading. In contrast, it relies primarily on community volunteers to provide tutoring services (Wasik, 1998).

Many students who find learning difficult to read have been behind on every front. Developmentally, they are slow in learning to speak. Knowledge of their world is incomplete. Finally, scores on intelligence tests are low (Bryant and Bradley, 1985).

Others have higher scores on intelligence tests. They have support of encouraging families and do not share the same developmental delays as those previously described. However, they too struggle with reading (Bryant and Bradley, 1985). "If reading can have such powerful results so too, but in the opposite direction, does failing to learn to read" (Bryant and Bradley, 1985, p.2).

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

In order to document the extent of students' underdeveloped reading skills, the following have been administered: an informal phonics inventory, a strategies checklist, and an informal reading inventory. The informal phonics inventory and the strategies checklist were developed by the researchers. The informal phonics inventory can be found in Appendix A. The strategies checklist can be found in Appendix B. The Informal Reading Inventory was developed by Jerry Johns of Northern Illinois University (1997).

In Site A, 10 of the 23 students were in the data collection process. These students were selected to represent a variety of skill levels. In Site B, four of the nine students were involved in the data collection process. These four students were the only children with parental consent to participate.

An analysis of the informal phonics inventory is presented in Tables 1 through 4. This inventory was conducted in a small room separate from the classroom. Students were tested individually.

Table 1

Auditory Discrimination of Phonetic Skills in Site A

Site A Student	Consonants Auditory 0-21	Consonant Digraphs Auditory 0-4	Consonant Clusters Auditory 0-16	Short Vowels Auditory 0-5	Long Vowels Auditory 0-5
1	19	3	14	4	5
2	20	3	14	4	5
3	20	2	16	5	5
4	19	1	12	4	5
5	20	4	12	5	2
6	20	2	10	3	5
7	20	0	12	2	5
8	19	3	16	3	5
9	20	4	16	5	5
10	21	4	16	4	5

Students listened to 21 consonant sounds. The greatest number of errors made in naming the consonant sounds was two.

Students listened to four common digraphs. One student incorrectly named letters of all four digraphs. One student incorrectly named letters of three digraphs. Two students were incorrect on naming letters of two digraphs. Three students made one error, and three students correctly named the letters of all digraphs tested.

Students listened to 16 common consonant clusters. One student made errors naming the letters in six of the consonant clusters. Four errors in naming the letters of the consonant clusters were made by three students, and two students named incorrect letters

of two consonant clusters. Of the ten students tested, four were able to correctly name letters of all 16 consonant clusters.

Students listened to five short vowel sounds. One student gave incorrect responses for three of the vowel sounds. Two students incorrectly named the vowel for two of the vowel sounds. Four students made an error naming one of the five vowel sounds. Three students correctly named all five short vowel sounds.

The results of this inventory indicate a deficit in three areas. These include naming letters of consonant digraphs, consonant clusters, and vowels. When listening to the sounds made by common digraphs, 70% of the students made errors in naming letters of the digraphs. Of the students tested, 60% made errors naming the letters of the 16 consonant clusters that they heard. When students were required to name the vowel of the short vowel sound that was presented orally to them, 70% made errors. When students' primary reading strategy is sounding out each phoneme, as is the case with most of these students (see Figure 1) they will struggle without these phonetic skills.

Table 2

Visual Discrimination of Phonetic Skills in Site A

Site A Student	Consonants Visual 0-21	Consonant Digraphs Visual 0-4	Consonant Clusters Visual 0-16	Short Vowels Visual 0-5	Long Vowels Visual 0-5
1	18	4	15	3	5
2	21	4	16	3	5
3	21	4	16	3	5
4	19	3	15	3	3
5	20	3	10	0	2
6	18	3	10	4	2
7	19	3	8	1	5
8	21	4	16	1	5
9	20	4	16	2	4
10	21	4	16	5	4

When shown upper-case consonant letters, two students made incorrect sounds for three of the letters. Two students made incorrect sounds for two letters, and two students made incorrect sounds for one letter. Four students made the correct sound for each of the consonants.

Four consonant digraphs were shown to the students. Four students made incorrect sounds for one consonant digraph, and six students were able to make the correct sound for all consonant digraphs.

Students were shown consonant clusters. One student was unable to make the sound of eight of the consonant clusters. Two students made incorrect sounds for six of the consonant clusters. Two students made incorrect sounds for one consonant cluster, and one student was able to make the correct sound for all consonant clusters.

To test students' knowledge of the five short vowel sounds, they were shown nonsense words made up of simple consonant-vowel-consonant patterns. One student produced incorrect vowel sounds on all of the words. Two students made errors in producing the sounds of four vowels. One student misread the vowel sounds in three words. Four students were unable to make the correct vowel sounds in two of the words. One student knew four vowel sounds, and one student made the sounds for all five words containing these sounds.

To test students' knowledge of the five long vowel sounds, they were shown nonsense words made up of four letter words having the silent "e." Two students produced incorrect sounds for three long vowels. One student misread the vowel sounds in three words. One student was unable to make the correct sounds for two vowels. Two

students misread one of the vowel sounds, and five students were correct in reading all words containing these sounds.

The visual discrimination portion of the phonics inventory shows a need for improvement in vowel usage. When reading the nonsense words made of a consonant-vowel-consonant pattern, 80% of the students made an incorrect vowel sound for two or more of the five words. When reading words with the long vowel pattern, 50% of the students made errors on one or more of the words.

Compared to the auditory discrimination of consonant digraphs and consonant clusters, the visual discrimination of these showed increased scores. When reading the digraphs, 40% of the students made one error. When reading the consonant clusters, 50% of the students made errors.

Table 3

Auditory Discrimination of Phonetic Skills in Site B

Site B Student	Consonants Auditory 0-21	Consonant Digraphs Auditory 0-4	Consonant Clusters Auditory 0-16	Short Vowels Auditory 0-5	Long Vowels Auditory 0-5
1	21	1	16	3	3
2	21	2	12	3	5
3	21	4	16	4	5
4	19	2	11	2	5

Students listened to twenty-one consonant sounds. The greatest number of errors made in naming the consonant sounds was two.

Students listened to four common digraphs. One student incorrectly named three digraphs. Two students knew two digraphs, and one student knew all of the digraphs.

Students listened to 16 common consonant clusters. One student made errors in naming five consonant clusters, and one student made four errors in naming the consonant clusters. Two students knew all of the consonant clusters.

Students listened to five short vowel sounds. One student gave incorrect responses for three of the vowel sounds. Two students made errors in naming two vowel sounds. One student knew four vowel sounds.

Students listened to three letter words, each containing one of the five long vowel sounds. One student identified three vowel sounds. Three students could correctly identify all five vowel sounds.

Analysis of this data indicates a notable deficit in auditory discrimination of consonant digraphs, consonant clusters, and short vowels. These are the same areas noted as showing a deficit for students in Site A. Of the students in this study in Site B, 75% were unable to name the letters of the consonant digraphs. Errors in naming the letters of the consonant clusters were made by 50% of the students. All students made errors naming short vowel sounds heard.

As indicated in Figure 2, sounding out each phoneme is the most commonly used reading strategy. Without the mastery of these phonetic skills, students will struggle when reading unfamiliar words.

Table 4

Visual Discrimination of Phonetic Skills in Site B

Site B Student	Consonants Visual 0-21	Consonant Digraphs Visual 0-4	Consonant Clusters Visual 0-16	Short Vowels Visual 0-5	Long Vowels Visual 0-5
1	21	1	16	2	0
2	21	4	15	3	2
3	21	4	16	4	3
4	21	3	14	3	2

Students were visually presented with 21 upper-case letters. All four students correctly identified these letters.

Four consonant digraphs were shown to the students. One student made incorrect sounds for three consonant digraphs, and one student misread sounds for two digraphs. Two students knew all four consonant digraph sounds.

To test students' knowledge of the five short vowel sounds, they were shown nonsense words made up of simple consonant-vowel-consonant patterns. One student knew two vowel sounds, and two students knew three sounds. One student knew four vowel sounds.

To test students' knowledge of the five long vowel sounds, they were shown nonsense words made up of four letter words having the silent "e." One student could not verbalize any of the long vowel sounds. Two students knew two sounds, and one student knew three sounds.

Again it is interesting to note the similarity between the students of Site A and the students of Site B. The data presented in Table 4 indicate a deficit in visual discrimination

of short and long vowels. When reading the nonsense words made up of the short vowel pattern and the long vowel pattern, each student made errors on all words presented.

An analysis of the strategies skills checklist is presented in Figures 1 and 2. The checklist was used for each student during one reading passage, and measured the frequency of six possible strategies.

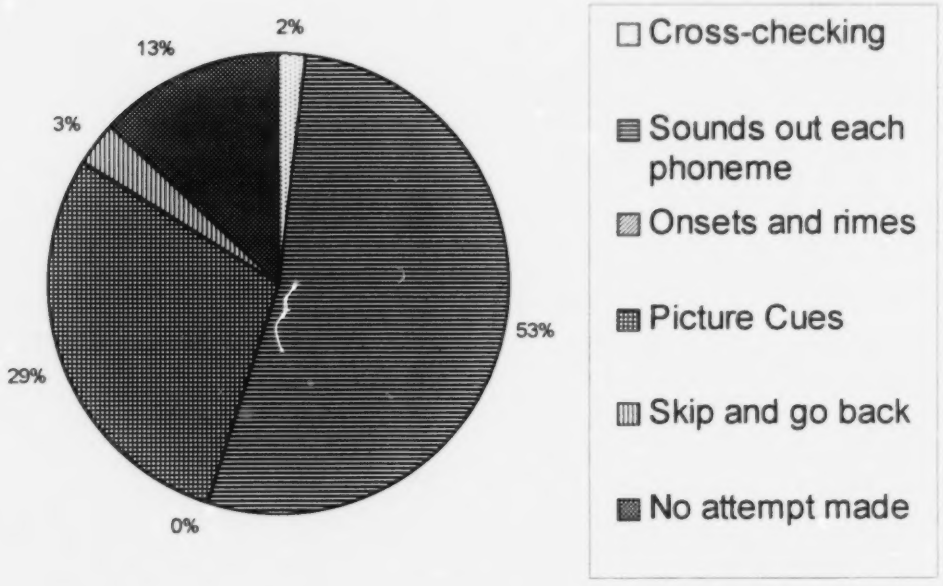


Figure 1. Reading Strategies used by the targeted students in Site A.

The most commonly used strategy by students in Site A was sounding out phonemes. The checklist reported this strategy was exhibited on average of 53%. The second most used strategy was picture cues, with a frequency of 29%. Students made no attempt at an unfamiliar word 13% of the time. The strategy of skipping words and going back was used to correct 3% of misread words. Cross-checking was used 2% of the time, and application of onsets and rimes was not used by any of the students.

It is not alarming to the researchers that students did not use onsets and rimes to read new words. This strategy is not taught through the reading curriculum in this school. Cross-checking is also not a strategy formally taught, which explains the low frequency of its usage.

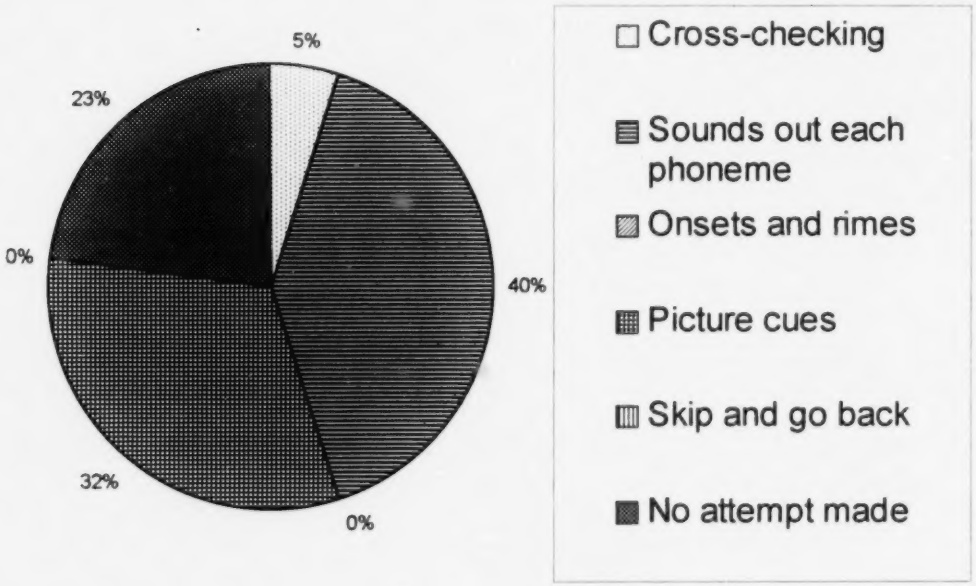


Figure 2. Reading Strategies used by the targeted students in Site B.

The most commonly used strategy by students in Site B was sounding out phonemes. The checklist reported this strategy was exhibited on average of 40%. The second most used strategy was picture cues, with a frequency of 32%. Students made no attempt at an unfamiliar word 23% of the time. Cross-checking was used to correct 5% of misread

words. The strategies of skipping words and going back and onsets and rimes were not used by any of the students.

As was the case in Site A, students in Site B did not use onsets and rimes to read unfamiliar words. Cross-checking was used on 5% of the time. Since both sites are in the same school, the same reading program is used by both of the teachers. No formal instruction of the strategy involving onsets and rimes or cross-checking took place prior to the intervention.

A portion of the Informal Reading Inventory was administered to determine the abilities of students to read a word correctly when given time to analyze the word. Results of this test are illustrated in Figures 3 and 4.

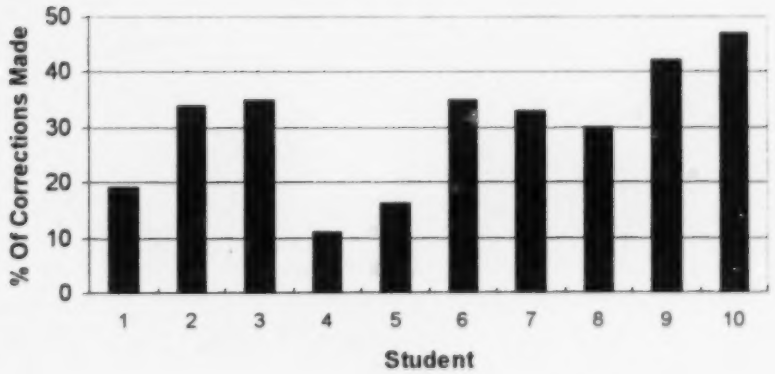


Figure 3. Percentage of corrections made after analyzing misread words. Site A.

After rapidly reading word lists, students were instructed to return to words that were misread. They were allowed time to analyze the words to make corrections. Percentage of corrections in Site A ranged from 11% to 47%.

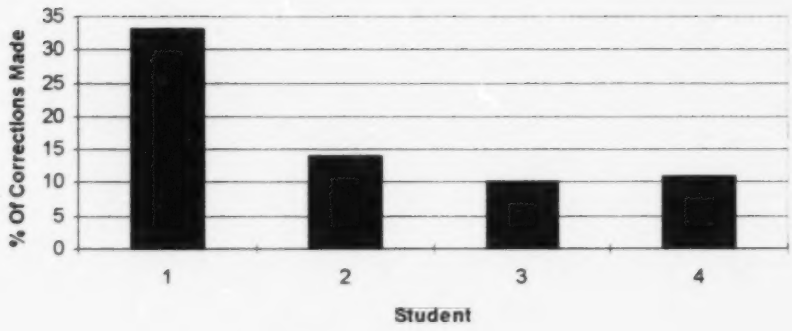


Figure 4. Percentage of corrections made after analyzing misread words. Site B.

Students in Site B were tested under the same guidelines as used in Site A. Percentage of corrections made by students in site B ranged from 10% to 33%.

When reading words from a list, students are not able to use context or picture cues, as there are none. They must rely on their knowledge of phonics, and their sight word vocabulary. Students in both sights were able to correct misread words through analysis less than 50% of the time. This indicates a weakness in phonics skills and sight word vocabulary.

Probable Causes

The Learning First Alliance (1998), an organization of 12 leading national education associations, states that reading failure is the primary reason for retention, special education placement and long-term remediation services (Learning First Alliance, 1998). In 1994, 40% of all nine-year-olds scored below the basic level on the National Assessment of Educational Progress. In response to this report, President Clinton proposed the America Reads Challenge with the goal of having nearly one million students working as literacy volunteers with children in grades kindergarten through third grade (Department of Education, 1996).

In 1998 a committee of the National Research Council declared a need for widespread reforms to "ensure that all children are equipped with the skills and instruction they need to learn to read" (National Research Council, 1998).

Literature suggests numerous reasons for students' poor reading skills. Some researchers suggest that a lack of services available in the public schools is a cause. Not all struggling readers qualify for special or compensatory education support services. Those students who do receive reading support through a special program, still receive the majority of their teacher-directed reading instruction through the regular classroom reading program. Thus, "elementary school classroom teachers are increasingly expected to take the crucial and primary role of accelerating the reading growth of elementary school struggling readers" (Duffy-Hester, 1999, p. 480). In the same article, a recent national survey of elementary school teachers revealed that many were unsure of how to meet the needs of struggling readers.

Reading disorders in children have been addressed through research that indicates causes based on cognitive and experiential deficits. The term specific reading disability has commonly been defined as "severe difficulty in learning printed letters and words in children who have at least average intelligence and who are not impaired by general learning difficulties" (Vellutino et al, 1996, p.601). It is assumed that certain criteria can be ruled out that suggest the primary cause of the disorder is genetic or organic in nature. The exclusionary factors that are experientially limiting include motivational problems, emotional disorder, sensory deficits, repeated absences from school, low general intelligence, and lower socioeconomic class. However, lack of educational history of a child can lead to a reading disorder when the deficit is due to insufficient prereading experience and/or unsatisfactory instruction.

Understanding how students actually go about the task of reading may assist teachers in pinpointing areas of difficulty. Often times, teachers assume that they know what reading strategies are being used by their students. This is known as assumptive teaching (Richardson & Morgan, 1997). When this takes place, teachers fail to identify underdeveloped reading strategies. Therefore, the students do not receive the instruction that they require to become successful readers. However, when teachers do realize the cues and strategies being used, they can then "support their efforts to extend the set of cues they attend to and strategies they use as they read" (Schwartz, 1997, p. 42).

Much of the literature regarding reading instruction addresses the issue of phonics instruction, and the trend towards "whole language" and "literature-based instruction." While some programs abandoned phonics instruction, others recognized the importance of teaching phonics, and balancing phonics with semantics and syntactics. "Any one area

cannot exist in isolation from the other if comprehension is to be maximize" (Routman & Butler, 1995). The understanding of letter-sound relationships is not important in itself, but is an important cueing system for decoding and spelling words. "Phonological information may be seen as a key variable but so are meaning, syntax, and visual information" (Clay, 1991, p. 314).

In his book, Why Johnny Still Can't Read, Rudolph Flesch (1981) maintains his assertion from his previously written book, Why Johnny Can't Read (1955), that reading skills have declined because schools have abandoned systematic phonics instruction. This traditional approach to teaching phonics begins by teaching children letter sounds and the symbols that represent these sounds. They are then taught how these symbols are blended together to represent words. As the students learn various combinations of letter codes, they become readers.

This instructional method, as suggested by Flesch, has been replaced by the "look and say" method. He describes this technique as children learning to read by reading, and then teaching whole words by sight. They are guided to learn words by matching words to pictures, being told the word by the teacher, and/or guessing the word in context while reading. Some "look and say" instructional guides will teach some phonics incidentally with no systematic structure from one grade to the next. "The child is taught to read before he's learned the mechanics-the sounds of the letters" (Flesch, 1981, p. 3).

Moustafa (1999) reports that there is a general agreement between researchers about how children learn to read and develop the ability to decode words using sound-symbol relationships. First, children's first recognizable words are read holistically. They are also

better readers when presented with material in context. Finally, children understand familiar language in print rather than print that uses language unfamiliar to them.

There is a correlation between these research agreements and the research that suggest children who are not reading struggle to analyze words that are spoken into phonemes (letter sounds). The problem is, remediation involves teaching children individual letter-sounds to increase phonemic awareness. Arguably, "If phonemic awareness is a consequence of becoming literate, as a growing body of noncorrelational research suggest, then this is a cart before the horse approach" (Moustafa, 1999, p. 440).

When teaching phonics, Theodore Clymer's study on phonic generalizations should be considered. This study examined 45 generalizations. Of these, 18 were found to be valid. This fact is used to argue that phonics should not be taught. It is also used to argue that rather than stressing rules, phonics instruction should stress regularity in words.

Of the many possible causes for poor reading skills, phonics instruction, or lack of it, is addressed in much of the literature. We have concluded, from our research, that neither complete immersion in phonics instruction, nor total disregard for phonics is appropriate.

Students who are taught phonics rules, or skills, must also be taught strategies. Good readers learn strategies to decode or spell words. They learn them from their own reading and writing. Some students do not. Educators must "help children who have not figured out the strategies on their own and who don't know "what you do!"(Cunningham, 1991 p.5).

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Educators are faced with the challenge of teaching phonics in their classrooms without neglecting student exposure to authentic literature (Routman & Butler, 1995). The authors maintain that students read to achieve meaning, and this is why phonics must be taught not in isolation, but together with semantics and syntactics. To begin, students must be immersed in engaging, complete texts. This can be done through the use of nursery rhymes, riddles, poetry, and the like. The next phase is to focus on individual sentences. Sentences are taken out of text, analyzed, and put back into the text. Phase three is to analyze individual words. Words are studied in isolation, and then replaced into the sentence, thus combining phonics skills with semantics and syntactics. The use of alphabet books, magnetic letters, and letter cards will help students focus on individual letters, which is the fourth phase. Lastly, students need to have opportunities to explore syllables and phonemes. Clapping, singing, and using onsets and rimes will lead to students' understanding of letters representing sounds. Although some students may require direct instruction in phonics, the greater part of reading instruction should be achieved through reading, discussing, and simply enjoying authentic literature.

Dottie Fowler (1998) is a first grade teacher who serves on a panel of 16 of the nation's leading experts on reading. She has served for two years on this panel at the National Academy of Sciences in Washington DC. Fowler applies practical strategies from reading research in her classroom of low income and at-risk students in Fairfax, Virginia. She maintains that good reading instruction combines phonics with quality literature.

Fowler suggests that there are seven components to quality reading instruction.

1. Phonemic awareness is understanding letter sound relations. Using rhyming words helps students understand that words are made up of individual sounds.

2. Phonics is taught in short mini-lessons teaching analytical skills.

3. Good stories are selected to match individual reading levels.

4. Individual instruction is difficult to schedule, but is of the utmost importance.

5. Classroom management techniques are important. Students need to be taught routines, expectations, and appropriate acceptable behaviors. Without good classroom management, educational theory cannot be applied.

6. Writing repetition gives the students practice with language. It is an opportunity for children to work at their own level.

7. Results from the previous year are compared to the current year's results. Techniques can be modified, or "fine-tuned" to better teach the students.

In their report published in the Australian Journal of Language and Literacy in 1997, Jill Scevak and Phillip Moore concluded that determining what reading strategies students used to understand text, can help teachers to develop effective reading strategies in these learners. Students involved in their study were students in fifth, seventh, and ninth grade.

To assess strategies used by these students, the researchers used a process referred to as think-alouds. Red dots were placed throughout reading passages, and students were to think aloud when they came to the cues. The use of the think-alouds proved valuable as a diagnostic strategy and as a teaching technique. Strengths and weaknesses in students' processing were determined. Use of procedures such as think-alouds lead to metacognitive thought that has been shown to enhance comprehension of textbook-type material.

Teaching for strategies is important in the primary grades as well as for older, struggling readers. Schwartz (1997) points out two types of processing strategies important to learning how to read. Searching strategies enable students to look for cues in their initial attempts to read. Self-monitoring strategies equip the students with the skills necessary to evaluate their attempts and determine if further searching is needed. Schwartz (p.42) suggests that the role of monitoring is neglected in reading instruction. Although students are coached by teachers to check whether their attempts make sense, students need to learn to recognize on their own, when their attempts are incorrect. An underlying issue is that the student must understand that readers make mistakes, and good readers recognize and correct those mistakes (p. 43).

Transactional strategies instruction is an alternative approach to reading instruction. It combines whole language instruction and instruction in word attack skills. Pressley, Brown, VanMeter, and Schuder (1995) believe that children should internalize comprehension and word attack strategies. Teachers can help students reach this goal by teaching them meaning from high-quality literature. Children may be taught to make predictions about the content, recognize parallels between the text and their prior

knowledge of experiences, and to ask questions about the information, or other aspects of the text. Students may be taught to reread passages or use picture cues when the meaning is unclear. Visualizing the meaning and summarizing along the way are two more strategies used to develop comprehension skills. In terms of decoding, students are encouraged to sound out words, use context cues, or reread sentences. Pressley et al. (1995) suggest that if the students are given the option of skipping unknown words, they will learn that it is acceptable to read more challenging material.

A version of transactional strategies instruction was implemented in a Maryland Public School system in 1991-1992. A group of low-achieving second grade students was divided into two groups. One group was taught using conventional strategies and the other was taught using a transactional strategies program called Students Achieving Independent Learning (SAIL). The SAIL students scored higher on standardized comprehension and word skills measures (Presley et al., 1995, p. 81).

A framework for balancing literacy in a whole-language classroom is outlined by Bruneau (1997). This framework is assembled in the same fashion as the food pyramid developed by the United States Department of Agriculture (USDA). She contends that, much like the framework of the food pyramid, literacy instruction should be organized in such a way that when all instructional formats are blended together, growth and development occur.

The framework identifies seven categories of instructional events. At the base of the pyramid, emphasis is placed on reading aloud to children every day. This includes material at and above their reading ability (Bruneau, 1997, p. 158).

Shared reading and shared writing make up the next level on the pyramid. They can be integrated together with modeling by the teacher. As the children develop skills in these areas, they can take a more active role with less teacher guidance (Bruneau, 1997, p.159).

The next level includes guided reading and guided writing. Reading strategies are taught during small and whole class instruction. Small writing groups allow teachers the opportunity to teach a specific skill and encourage peer discussion (Bruneau, 1997, p. 159).

Further up the pyramid is reader's and writer's workshop. Children are allowed time to read and write on topics of their choice. This time is used by the teachers for group and individual conferencing (Bruneau, 1997, p. 160).

Direct instruction of skills is at the top of the pyramid. According to the author, skills should not be taught alone. They must be taught within real and relevant reading events (Bruneau, 1997, p. 160).

In June of 1998, the Learning First Alliance, an organization of twelve leading national education associations, issued an action plan outlining essential needs of children learning to read. The plan begins with pre-kindergarten students and continues through upper-grade nonreaders. Formal instruction in phonemic awareness and phonics along with exposure to authentic literature and writing opportunities is required. By the end of kindergarten, students should have had a great deal of experience with language and literature. They should be familiar with the alphabet and the sounds that each letter represents. All children in first grade need to be taught phonetic decoding strategies. Some students may require more direct instruction than others may. The literature used in first grade should have a high proportion of words that the student can apply the

phonemic and phonics skills to. The reading material should also provide meaning and enjoyment. Comprehension skills should be taught in conjunction with decoding skills. In second grade, further phonics instruction is needed, but based on an individual basis. Second graders need to build comprehension skills, and they must learn to monitor their own comprehension. Exposure to a variety of literature forms, including non-fiction is important at this stage (Learning First Alliance, June, 1998).

In reference to poor readers at upper elementary levels, the Learning First Alliance suggests that these students may have motivational problems in addition to any other factors leading them to learn to read at an earlier level. Structured phonics and spelling instruction as well as one-on-one tutoring programs often lead to improved reading performance (Learning First Alliance, June, 1998).

Students placed in special education programs need to have their reading difficulties diagnosed. Individual strategies must be developed to help these students. Effective strategies for these students are often the same as for other low achievers, or early readers (Learning First Alliance, June, 1998).

Many struggling readers do not qualify for special education services, or any other compensatory education support. Those who do receive help through support programs such as Reading Recovery still participate in the teacher-directed reading time in their regular education classrooms. Regardless of the effectiveness of the interventions, struggling readers need more than this type of short-term support. In efforts to address this problem, a number of reading programs have been designed to facilitate reading growth in regular education classrooms (Duffy-Hester, 1999, pp. 480-481).

Duffy-Hester (1999) reviewed six elementary school reading programs. Based on a combination of her experience as a classroom teacher and reading specialist, and on the strengths of each of the six programs, she suggests ten principles to use as guides for designing and implementing reading programs to support the growth of struggling readers.

To start, a reading program should be a collection of multiple theories. Teachers should be thoughtful in terms of selecting techniques, roles and materials. A theoretically balanced reading program will support students' literacy growth (Duffy-Hester, 1999, p. 487).

The second principle states that every activity or element of every component of a program, be justified theoretically and practically. Often times struggling readers are engaged in low-level tasks which do not necessarily meet their needs, or lead to improved reading skills. Engaging the students in program elements with instructional and theoretical merit will better meet these readers' needs (Duffy-Hester, 1999, p. 488).

The third principle relates to direct and explicit teaching of specific reading skills. Word identification, comprehension, and vocabulary strategies should be taught in conjunction with authentic reading and writing events. Through this method, students will not only learn the skills, but will also learn the connection of the skills to their own reading and writing (Duffy-Hester, 1999, p. 488).

Teachers need to read aloud to students daily. The fourth principle points out the importance of exposing children to a variety of genres. Students also need opportunities to take part in shared reading, guided reading, and independent reading (Duffy-Hester, 1999, p. 489).

The fifth principle stresses the importance of basing reading instruction on needs rather than on a fixed scope and sequence. Needs are determined by frequent, meaningful assessments (Duffy-Hester, 1999, p. 489).

Duffy-Hester (1999) sees teachers as well-informed decision-makers. Reading programs of reflective teachers change as the needs of the students do. The sixth principle expresses the need for teachers to use their practical, personal and theoretical knowledge to drive their reading instruction (Duffy-Hester, 1999, p. 489).

The seventh principle calls for staff development in the area of reflective teaching. Teachers should have opportunities to learn how to make a program work for themselves as well as for their students. Aspects of a program need to be implemented, reflected upon, and modified based on what was learned through teachers' reflections. Educators need to link research to practice, and this can be achieved through reflective teaching (Duffy-Hester, 1999, p. 490).

Setting multiple instructional goals for a reading program is the eighth principle. Programs designed to help readers achieve many goals, are likely to produce able readers. To reach independence in reading, students must master many goals. A reading program needs to focus on an eclectic set of goals (Duffy-Hester, 1999, p. 490).

The ninth principle is derived from the diversity of the classroom. Recognizing the varying literacy needs that teachers face, Duffy-Hester believes we must provide multiple contexts for learning. A program needs to be able to adapt to cultural diversity (Duffy-Hester, 1999, p. 490).

The final principle set states that reading programs should be designed to support the reading growth of struggling and nonstruggling readers. If a program is centered on the

learner, it can be adapted to support all readers, regardless of their level of reading competency (Duffy-Hester, 1999, p. 490).

Wasik (1998) reviewed a number of tutoring programs, some of which use certified teachers as tutors and some of which use community volunteers as tutors. Research found that using certified teachers as tutors was more effective. However, when school districts cannot financially support this type of tutoring program, parents and community volunteers are used. In order to make substantial impact on the students' reading performance, volunteers "need a well-developed, structured, tutoring program, as well as high quality training and supervision" (Wasik, 1998, p.562).

Four tutoring programs were suggested by Wasik (1998) as being effective. Reading Recovery uses certified teachers to tutor at-risk first graders. Success for All employs certified teachers as tutors for students in first, second, and third grade. This program also includes services for families, reform of the curriculum, and professional development. Community volunteers provide tutoring using the Howard Street Tutoring Program, developed in Chicago in 1979. Tutoring is done in a community center after school. The final program utilizes pullout services during the school day. It is called Book Buddies, and is designed for first graders struggling to learn how to read (pp. 565-565).

All four programs have seven out of eight of the following components, which make them effective programs (Wasik, 1998, pp. 565-569).

1. Tutors must be supervised by certified reading specialists.
2. Tutor training must be ongoing and include frequent review by specialists.
3. Basic elements such as word analysis, writing skills, and exposure to various genre must be addressed during structured tutoring sessions.

4. Sessions need to be consistent and thorough.
5. Quality materials must be made available for the tutoring model.
6. Ongoing assessment is critical.
7. Tutors must be dedicated to the tutoring model.
8. Planning for the tutoring sessions must be related to classroom instruction.

Reiner (1998) maintains that to improve a literacy program, one must instruct his students in phonemic awareness. She suggests that this can be achieved through activities such as word play, listening to poetry, rhymes and songs, language play, and engaging in literature which is predictable.

Reiner bases her philosophy on the work of Patricia Cunningham. Her approach includes specific activities to enhance phonemic awareness. Play-acting is one such activity where children read and act out predictable literature and nursery rhymes. Children also play name games, where each child's name is studied for sound/symbol relationships and letter patterns. According to Reiner (1998, p. 71), this approach improves students' reading knowledge, spelling and writing, and increases their enthusiasm for learning.

Richgels, Premba, and McGee (1996) show their support for phonemic awareness in beginning reading instruction. They believe that phonemic awareness should be taught within contextualized reading and writing activities. This philosophy breaks from the traditional role where phonemic awareness has been taught with isolation of sounds and words through direct instruction.

To assist children in developing phonemic awareness in holistic contexts, Richgels et al. (1996, pp. 634-635) describe the "What Can You Show Us?" activity. This activity

includes four elements: preparation, previewing, student demonstrations, and applications. Teachers select and display relevant texts within a unit of study for preparation. Key words and pictures are highlighted for students to identify. Previewing begins when the teacher facilitates awareness to a new text displayed in the room. Some children will visit the text, while the rest become exposed during whole class instruction. Students are encouraged to share their ideas about the text and what they see. During student demonstrations, the children do the teaching. They are brought up individually to tell what they know about the text through background experience or by reading words in the text. Identifying letters and sounds, words, punctuation, and text format are the focus.

Shared reading by the teacher occurs in the final element of applications. This involves discussions led by the teacher and student predictions based on the text and illustrations. Finally, it includes a review of student demonstrations (Richgels et al., 1996, p. 635).

Moustafa and Maldonado-Colon (1999) describe an approach to teaching letter-sound relationships in meaningful context using whole to part instruction. Shared reading of a predictable text is the beginning phase of this type of instruction. As the teacher slowly reads, she points to each word enabling the students to see the connection between print and speech. The children then read with a partner, taking turns as they each read the whole story. One to one correspondence is assessed during partner reading. This must be accomplished before whole to parts phonics instruction can begin.

As instruction begins, the teacher and the students choose words from the text. They are written on small cards. Each word is studied for onsets (beginning sounds) and rimes

(ending sounds). The cards are then placed on a word wall with other words having similar letter/sound representations (Moustafa and Maldonado-Colon, 1999, p. 451).

Teaching reading with an individualized reading program will provide more success for children than teaching with a reading program with emphasis on skill instruction. Carol Avery states that "teaching with a program often misdirected children's natural learning processes and asked them to deal with nonsense or trivia" (Avery, 1993, p.309). Using a reader's workshop program requires time for young readers to become comfortable with books in an environment conducive to reading. Students need to be taught to select books appropriate for their skill level, and need time during the school day to read these books. Students will respond to books by interacting with peers and adults. Guided reading sessions give the teacher opportunities to teach specific skills while reading authentic literature with the students. Reading workshop includes daily mini-lessons, much like writers workshop does. For this approach of teaching reading to be successful, teachers will need to learn to "teach by observing and responding rather than proclaiming and asserting" (Avery, 1993 p. 309).

At a time when experts were calling for an end to phonics instruction, Patricia M. Cunningham (1991) began investigating which strategies children actually used to read unknown words. Through her work as a teacher of young students, a researcher, and a curriculum consultant, she concluded that teachers could engage children in reading good literature, and at the same time teach them how the alphabetic language works (p.1). Making phonics instruction useful is the underlying issue of Cunningham's philosophy of teaching reading.

Cunningham differentiates strategies and skills by stating that " a strategy is something you do to accomplish a goal" (Cunningham, 1991, p. 3). Skills are taught in an attempt to describe and explain the alphabetic system. Four strategies are use by good readers. Good readers look at the letters in a left-to right sequence, match letter patterns with pronunciations, chunk big words, and cross check (p.4).

In her book, Phonics They Use: Words for Reading and Writing, Cunningham reviews activities stemming from her philosophy of reading instruction. To begin, children need a strong foundation. Early exposure to print, nursery rhymes, chants, and Dr. Seuss books will lead to phonological awareness, or the ability to manipulate sounds (p. 11). A child's phonological awareness is highly correlated with their success in reading. In a classroom setting, this awareness can be developed through shared reading of predictable books, discussing books before, during and after reading, and acting out stories, and writing simple texts.

With a sound foundation, students begin to recognize consonants and explore word families, or phonograms. Making words is an activity designed by Cunningham (1991) to teach young readers to recognize phonograms, use consonants, and learn special letter combinations, or digraphs. This approach supports research claiming that students decode words not by memorizing phonics rules, but rather by using spelling patterns recognized from words they know (pp. 56-57).

As students learn to recognize patterns in one-syllable words, the same strategy is used to decode new polysyllabic words. Students will chunk big words into smaller parts. The challenge for students is not as much in decoding polysyllabic words, but in placing the word's accent in the proper place. Again, young readers do not generally apply accent

rules. Instead, students pronounce the word different ways until one way sounds correct. Cross checking is when teachers guide their students in determining whether or not their guess makes sense. Illustrations and context are used to help make this determination (Cunningham, 1991, p.117).

Lynch, a full time teacher, has conducted seminars for the Bureau of Education and Research. In her book, Easy Lessons for Teaching Word Families, she has outlined lessons based on Patricia Cunningham's making words program. The lessons have been modified to meet the needs of low-achieving readers and at-risk younger students. The lessons in her book teach thirty-seven phonograms which make up 500 primary words. The emphasis is on detecting patterns rather than memorizing and applying phonics rules. "'Two vowels go walking, the first one does the talking' is only true in less than 50 percent of words" (Lynch, 1998 p. 5).

Project Objectives and Processes

As a result of increased instructional emphasis on reading strategies, during the period of February 1999 to May 1996, the students from the targeted classrooms will increase their reading levels as measured by a teacher-designed checklist, an informal reading inventory, and an informal phonics inventory.

This goal will be achieved through the implementation of the following solution components:

1. Awareness of common onsets (the syllable that comes before the vowel) and rimes (the vowel and remaining letters).
2. Use of context cues.
3. Use of picture cues.

Project Action Plan

The researchers have developed the following two components to promote the awareness of onsets and rimes: making words and weekly spell checks. Making words is an activity to teach onsets and rimes. Students are given a number of letter cards and use these cards to make words. The researchers have created the supplies necessary to conduct making words activities. Letter cards were made by cutting small rectangles from tag board. Using black ink, consonant letters were printed in lower case on one side and upper case on the other. The same was done with vowel letters, however, red ink was used. Letter "y" was printed in blue ink. Enough letters were made for all class members, and this amount was doubled for common letters. The letter cards were laminated and stored in a thirty-drawer "caddy." One drawer was used for each letter. A duplicate set of letter cards was created using large index cards. These were also laminated.

To begin, students will be given a combination of letter cards. For example, students may receive letters a, b, g, m, p, s, and t. Students will be told to find their red letter (in this case, the vowel a), and put that letter in the center of his/her workspace. It will be explained that this will be the middle letter of all the words they will make. As students listen to dictated words, they will use their letter cards to make the word. Upon completion, one student will be selected to use the large index cards to make the word in a pocket chart. The other students will check and correct their spelling.

The letter cards distributed to the students will vary depending on the word patterns being taught. One word for each rime will be printed on a card and placed on a word wall. This activity will be done in small group settings, four times each week for fourteen weeks. A sample lesson can be found in Appendix C.

Every Friday a spell check will be conducted. Students will write ten to twelve words dictated by the teacher. These words will contain the common rimes introduced during the week. At the end of the test, the words will be displayed on butcher paper, and students will make any corrections necessary. Spell checks will be conducted on the last school day of each week for fourteen weeks. A sample of a spell check word list can be fond in Appendix D.

To assist children in using context cues to read unfamiliar words, the strategy of cross checking will be implemented. Cross checking is a strategy that uses the context of a sentence along with the beginning consonants to help students decode unfamiliar words. During whole group instruction, sentences will be written on an overhead transparency. An unfamiliar word will be covered with two pieces of paper. One to cover the beginning consonant, and the other to cover the remaining letters The students will be instructed to read the sentences and guess what word has been covered. Guesses that make sense within the context will be recorded next to the sentence. Class discussions determine whether or not the guesses are correct. After several guesses have been recorded, the paper covering the first letter will be removed. Any recorded guesses that do not begin with the letter revealed will be erased. Any additional guesses that make sense and begin with the correct consonant will be added to the list. Finally, the whole word is uncovered and the students check for a correct guess. The procedure is repeated with four more different sentences. This activity will be utilized two times a week for a fourteen-week period. A sample of a cross-checking lesson can be found in Appendix E.

To assist children in using picture cues when reading unfamiliar words, "book walks" will be implemented. During guided reading sessions, new book titles will be introduced

with a book walk. During a book walk the title is read and pictures are discussed, introducing new and alternative vocabulary. For example, when discussing an illustration of a child holding a box, students will be asked, What is the child holding? What else could it be called? and Have you ever heard of the word crate? When reading the book the students will be reminded of the vocabulary discussions. They will also be instructed to use the illustrations for clues. Book walks will be done as a preview whenever a new book is introduced in a guided reading session. Taking into consideration text difficulty, book length and depth, and pacing of guided reading groups, this will range from one to three books each week. This intervention will last for fourteen weeks.

Methods of Assessment

Baseline date to measure growth will be collected using a number of assessment tools. To test strategies used by the students, a checklist was designed by the researchers. The same checklist will be administered at the conclusion of the intervention to measure the application of strategies used and their frequency.

An informal reading inventory, developed by Jerry Johns of Northern Illinois University (1997), will be administered. The Graded Word List sub-test will be administered to determine the reading level of each student.

An informal phonics inventory will be utilized to measure decoding skills. This tool was designed by the researchers to measure the application of specific phonetic generalizations. These tools will also be administered at the start and the close of the intervention.

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to increase the reading levels of students by increasing students' reading strategies. Instructional emphasis on reading strategies was used to effect this change. Specifically, students were taught the use of common onsets and rimes, and the use of picture and context cues.

To teach the use of onsets and rimes, lessons known as making words were used four times per week. The book Easy Lessons for Teaching Word Families (1998) by Judy Lynch provided the teachers with 55 lessons to teach 37 rimes. Weekly spell checks were conducted to give the students the opportunity to apply their knowledge and understanding of onsets and rimes. Words included in the spell checks were selected by each site's classroom teacher. The only guidelines used in selecting words for the spell checks were that the words must contain rimes studied during that week, and no list would contain more than 12 words.

To teach the use of context cues, the strategy of cross-checking was used. Cross-checking lessons were conducted twice each week. Lessons in cross-checking were designed by the researchers. The intent was to design these lessons to relate to the making words lessons.

Use of picture cues, the final strategy, was taught through the use of "book walks." During small group guided reading sessions, the teacher led the students through a book walk. This process is somewhat of a preview of a new book to be read. The text is not addressed, and attention is drawn to illustrations. The teachers facilitated discussions that would generate related vocabulary words. It was difficult to pre-determine the frequency of the book walks. Text difficulty, book length and depth, and pacing of guided reading groups were taken into consideration. Our goal was to do book walks with one to three books each week.

The researcher were able to conduct all of the interventions as planned. No deviations were required. The fourteen week intervention took place between February and May of 1999.

Presentation and Analysis of Results

In order to assess the effects of the interventions implemented to improve the reading levels of the students, posttesting was completed. The testing tools used prior to the interventions were used upon completion of the 12 week intervention period. The following Tables and Figures present the posttesting data, and illustrate the effects of the interventions.

Table 5

Auditory Discrimination of Phonetic Skills in Site A

Pretest Data:

Site A Student	Consonants Auditory 0-21	Consonant Digraphs Auditory 0-4	Consonant Clusters Auditory 0-16	Short Vowels Auditory 0-5	Long Vowels Auditory 0-5
1	19	3	14	4	5
2	20	3	14	4	5
3	20	2	16	5	5
4	19	1	12	4	5
5	20	4	12	5	2
6	20	2	10	3	5
7	20	0	12	2	5
8	19	3	16	3	5
9	20	4	16	5	5
10	21	4	16	4	5

Posttest Data:

1	21	4	16	5	5
2	21	3	16	5	5
3	21	3	16	5	5
4	21	3	15	5	5
5	21	4	14	5	5
6	21	4	16	5	5
7	21	3	16	3	5
8	21	4	16	4	5
9	21	4	16	5	5
10	21	4	16	5	5

In Site A, posttesting of the auditory portion of the phonics inventory showed improvements in all five areas. Of 21 consonant sounds, all students named all consonants. When listening to four consonant digraphs, four students made one error naming the letters, and six students correctly identified letters of all four digraphs. Students listened to 16 consonant clusters. Eight students correctly identified letters of all

16 consonant clusters. One student made one error naming letters, and one student made two errors naming letters.

Students listened to five short vowel sounds. Eight students correctly named five vowels. One student correctly named three of the five vowels, and one student named four. After listening to the long vowel sounds, all students correctly named five vowels.

Students' auditory discrimination skills improved after the intervention. All students correctly named consonants and long vowel sounds with 100% accuracy. Although two students scored less than 100% when naming short vowels, this is not alarming for students in second grade. Marked improvement also is noted regarding consonant digraphs. Four students made errors naming letters of the consonant digraphs. Each of these students made one error. This compares with the pretest data which illustrates mistakes made by seven students. Errors made by these students ranged from one to four.

Discrimination of consonant clusters improved during interventions. Two students incorrectly named letters of consonant clusters. One student made one error, and the other student made two errors. In comparison, six students made errors during the pretesting, and these errors ranged from two to six.

Table 6

Visual Discrimination of Phonetic Skills in Site A

Pretest Data:

Site A Student	Consonants Visual 0-21	Consonant Digraphs Visual 0-4	Consonant Clusters Visual 0-16	Short Vowels Visual 0-5	Long Vowels Visual 0-5
1	18	4	15	3	5
2	21	4	16	3	5
3	21	4	16	3	5
4	19	3	15	3	3
5	20	3	10	0	2
6	18	3	10	4	2
7	19	3	8	1	5
8	21	4	16	1	5
9	20	4	16	2	4
10	21	4	16	5	4

Posttest Data:

1	21	4	16	5	5
2	21	4	16	5	5
3	21	4	16	5	5
4	21	4	16	5	5
5	21	4	16	5	5
6	21	3	16	5	5
7	21	4	13	4	5
8	21	4	16	4	5
9	21	4	16	5	5
10	21	4	16	5	5

In Site A, the visual component of the phonics inventory indicated improvement as well. When shown upper-case consonant letters, all students produced the correct consonant sound 100% of the time. Four consonant digraphs were shown to the students. One student made one error in making the corresponding sound. Nine students were able to make the correct sound for all consonant digraphs. Students were shown 16 consonant clusters. One student made errors on three of the clusters. Nine students made no errors.

To measure knowledge of five short vowel sounds, students were shown nonsense words made up of simple consonant-vowel-consonant patterns. Two students produced an incorrect vowel sound when reading the words. Eight students made the correct sounds for 100% of the words. The same procedure was used for long vowel sounds. Nonsense words contained a final silent "e." All students correctly read each of the five words.

When comparing the pretest data and posttest data of visual discrimination skills, increased scores are noted in all areas. Students were able to produce the sounds of 21 consonants and five long vowels. Pretesting indicated six students making errors in producing consonant sounds, and five students making errors in producing long vowel sounds. Post data results of short vowel sounds indicated two students making errors. Each student made one error. Again, this is not an alarming result at the second grade level.

Data indicate improvement made by students when they made the sounds of consonant digraphs and consonant clusters. Pretest data compared to posttest data indicate a decline in the number of errors made. Combined errors in producing sounds for consonant digraphs, and consonant clusters in pretesting numbered 26. Combined errors in posttesting numbered four.

Table 7

Auditory Discrimination of Phonetic Skills in Site B

Pretest Data:

Site B Student	Consonants Auditory 0-21	Consonant Digraphs Auditory 0-4	Consonant Clusters Auditory 0-16	Short Vowels Auditory 0-5	Long Vowels Auditory 0-5
1	21	1	16	3	3
2	21	2	12	3	5
3	21	4	16	4	5
4	19	2	11	2	5

Posttest Data:

1	21	3	16	4	4
2	21	4	15	5	5
3	21	4	16	5	5
4	21	3	15	4	5

In Site B, posttesting of the auditory portion of the phonics inventory showed improvement in all five areas. Of 21 consonant sounds, all students named all consonants. When listening to four consonant digraphs, two students each made one error in naming the letters. The remaining two students knew the letters within all four digraphs. When listening to consonant clusters, two students each made one error in naming the letters. Two students knew all of the letters in the consonant clusters.

Students listened to five short vowel sounds. Two students correctly named four of the vowels, and the other two students named all five vowels. After listening to the long vowel sounds, three students correctly named all five vowels and one student correctly named four.

When comparing pretest and posttest data, knowledge of consonant letter sounds was a strength of all students. Improvements were noted in the students' ability to discriminate letter sounds in both consonant digraphs and consonant clusters. In both of these areas, two of the four students knew all of the sounds after completion of the intervention. The other two students were only incorrect in making one error in each of these two areas.

Auditory perception of short vowel sounds was an area of difficulty for students during pretesting. Upon completion of the intervention, two students could correctly identify four short vowel sounds, and the other two knew all five sounds. Students did well discriminating long vowels sounds during both testing sessions.

Table 8

Visual Discrimination of Phonetic Skills in Site B

Pretest Data:

Site B Student	Consonants Visual 0-21	Consonant Digraphs Visual 0-4	Consonant Clusters Visual 0-16	Short Vowels Visual 0-5	Long Vowels Visual 0-5
1	21	1	16	2	0
2	21	4	15	3	2
3	21	4	16	4	3
4	21	3	14	3	2

Posttest Data:

1	21	3	16	4	3
2	21	4	15	5	4
3	21	4	16	5	5
4	21	4	16	4	4

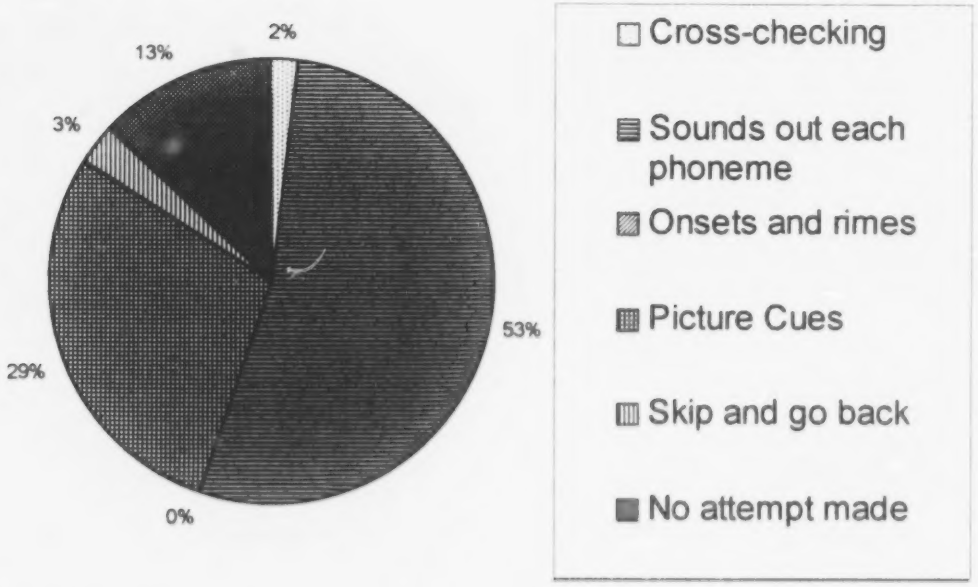
Students in Site B also improved in visual phonetic skills. All students knew 21 consonant sounds. When presented with consonant digraphs, one student named the letters in three digraphs, and three students named all letters of the four digraphs. Three students knew the correct letters for all 16 consonant clusters, and one student knew the letters for 15 sounds.

Knowledge of short and long vowel sounds also improved. Two students were each incorrect in naming the letter for only one vowel sound, and two students knew the letters for all vowel sounds. When presented with words containing long vowels, one student incorrectly named one letter within a word, and three students correctly identified all five letters.

The visual portion of the phonics inventory also showed improvements in students' reading skills. Three students could produce the sounds for consonant digraphs and consonant clusters with 100% accuracy.

An increase in knowledge of short and long vowel sounds was also shown by pretest and postetest data. Before intervention, a total of eight errors in producing short vowel sounds were made by the students. Posttest results indicate combined errors totaling two. A decline in errors when producing long vowel sounds is also evident. Combined errors during pretesting totaled 13, and only four during posttesting.

Pretest Data:



Posttest Data:

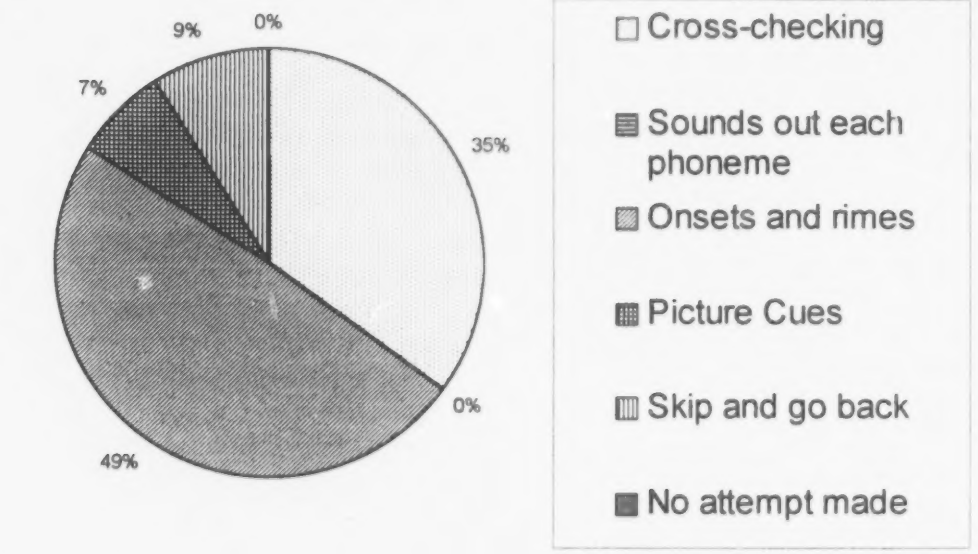
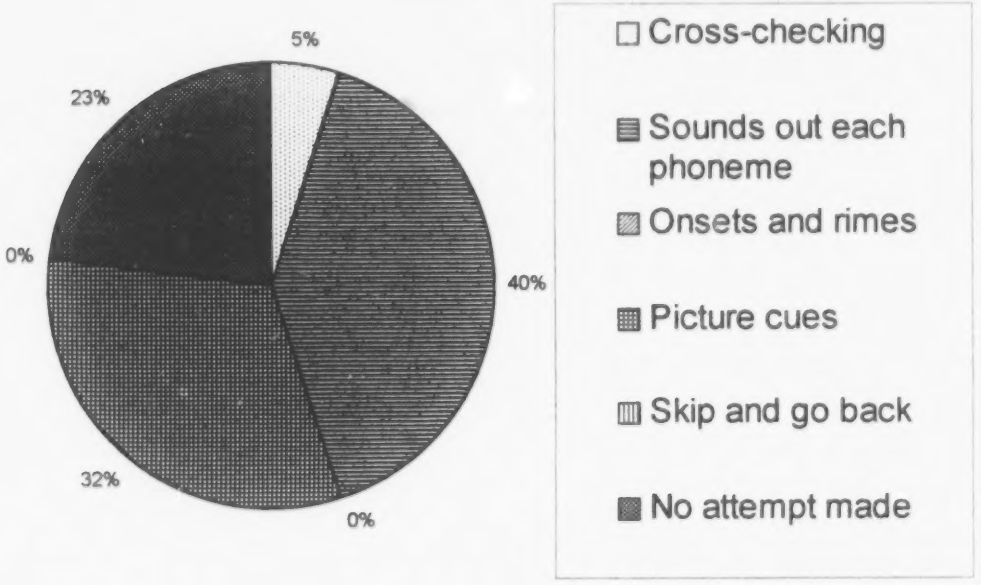


Figure5. Comparison data of Reading Strategies used by the targeted students in Site A.

The most commonly used strategy in Site A was the application of onsets and rimes. Pretesting data showed no use of this strategy. Cross-checking, used 2% of the time

before the intervention, was used 35% of the time after intervention. Sounding out individual phonemes was found to be the most frequently used strategy during pretesting. Posttesting data showed it was not used at all. The use of picture cues also declined. Percentage of frequency dropped from 29% to 7%. Although the use of picture cues is considered to be a useful strategy, it is most effective when used in conjunction with other reading strategies. Data show an increase in students' inclination to skip unfamiliar words and return to them. This indicates that the students are drawing from an increased number of strategies to apply during reading. Posttesting data also show that attempts were made on all words in the reading passage.

Pretest Data:



Posttest Data:

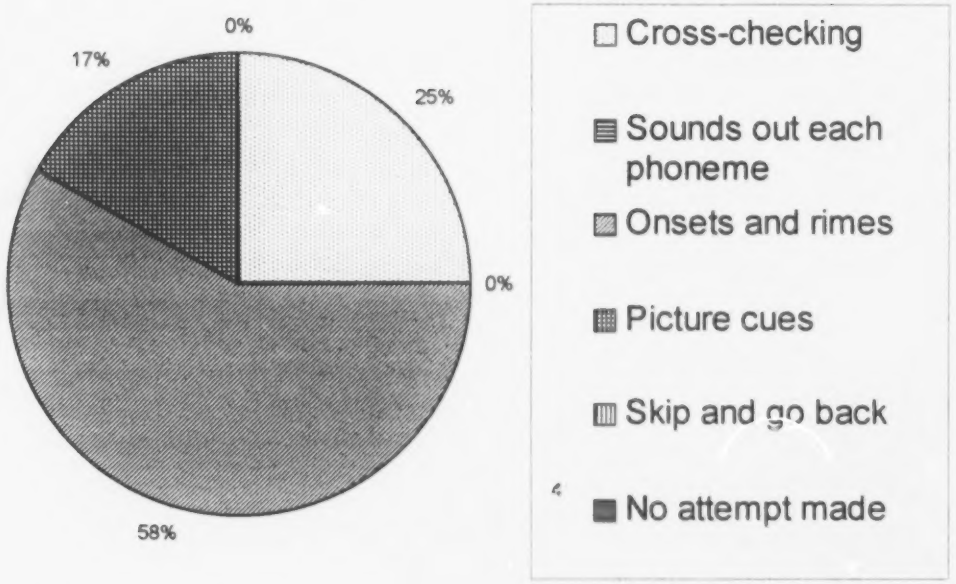


Figure 6. Comparison data of Reading Strategies used by the targeted students in Site B.

In Site B, posttest results indicate the most commonly used strategy in Site B was onsets and rimes. The students made no attempt to use this strategy before intervention. The implementation of this strategy significantly increased usage from 0% to 58%. The strategy most frequently utilized during pretesting was sounding out each phoneme. This strategy was not present at all as indicated by posttesting data. Cross-checking increased from 5% to 25%. The use of picture cues declined from 23% to 17%. Use of picture cues is an important strategy to use, however students made more use of other strategies available to them. Post data results also show that students attempted to use at least one strategy that they knew, rather than to make no attempt at all which was true 23% of the time before intervention took place.

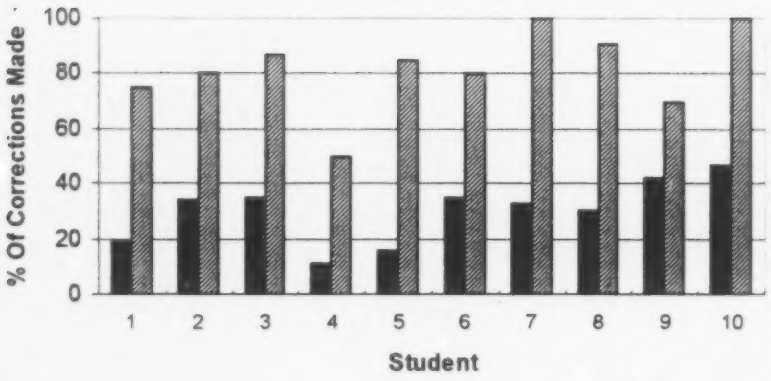


Figure 7. Comparison data of corrections made in analyzing words. Site A.

Posttesting data gathered from the I.R.I for Site A indicated a greater percentage of corrections made through word analysis. When students were allowed to analyze misread words from a word list, the percentage of corrections ranged from 0% to 100%. This shows an increase from the pretesting percentages that ranged from 11% to 47%.

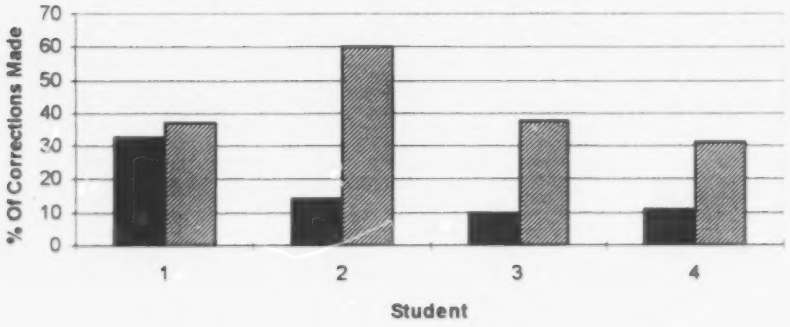


Figure 8. Comparison data of corrections made after analyzing words. Site B.

Posttesting data gathered from the I.R.I indicated a greater percentage of corrections made through word analysis. Percentage of corrections made during word analysis in Site

B ranged from 31% to 60%. This shows an increase from the pretesting percentages that ranged from 10% to 32%.

Conclusions and Recommendations

The goal of this action research project was to improve the reading levels of students through application of multiple reading strategies. Based on the presentation and analysis of the data collected, our goal was achieved. This data was collected through the use of three testing tools. When considering the effectiveness, in terms of information gained, we have drawn some conclusions.

Regarding the Informal Reading Inventory (Johns, 1997), we found this limiting in that it tested isolated decoding skills. We would advise future researchers to administer the narrative portion of the test as well. This would allow students to use context cues together with decoding skills.

The strategies checklist is an excellent way to avoid assumptive teaching. It provides the teacher a way to determine which strategies are being used by the students and which strategies need to be taught to the students. We would suggest developing a rapport with the students before making use of this tool.

Teachers will appreciate the ease in which this checklist can be used. There is no manual to follow, and no special materials are needed. The only requirements are an understanding of the strategies named in the checklist, and how to recognize them.

The informal phonics inventory requires a quiet setting and a moderate amount of time to administer. We felt it was a valuable tool in developing specific phonics skills. Since these skills are tested auditorally and visually, teachers can determine possible deficits in auditory and/or visual discrimination.

Through formal instruction of three reading strategies, we were able to equip the students with the skills needed to experience success in reading. Teachers of both sites observed students applying the onsets and rimes strategy in their writing as well as their reading. Students manipulated the letter cards to help them spell difficult words. In Site A, students had access to letter tiles from Scrabble game sets. These manipulatives were sought during free times, when students "played" making words.

An "I Spy" theme was also developed by the researchers to extend the making words lessons and prevent them from becoming isolated skills. Bulletin boards were created to display word cards for each rime learned. These words were placed below the corresponding vowels. Each child kept an "I Spy" book in his/her desk. There was a page for each rime. After working in a small group setting for a lesson on onsets and rimes, students returned to their desks to record words containing the new rime learned. Worksheets were created with sentences containing words with a common rime. A sample worksheet can be found in Appendix F. Students used highlighters to highlight the rimes "spied" in the sentences. All of these extensions provided the students with a variety of ways to apply their new knowledge. The researchers agreed that this was effective.

Although the making words lessons were valuable to student learning, there was a great deal of time involved in preparing the materials needed. We warn teachers against "cutting corners" in this process. It is absolutely necessary to have all the materials available. We highly recommend using Judy Lynch's book that is available through Scholastic Books. The book contains a materials list.

Data indicate a decline in the use of picture cues. However, teachers did observe this strategy being used to a lesser degree, and generally in conjunction with other reading

strategies. This student behavior was observed not only during reading, but also during other curricular periods. Science, social studies, and health are taught through a program that requires textbook reading. The language and vocabulary are intended to be developmentally appropriate, but there are still some words that are difficult for the students to read. Throughout the intervention period, teachers asked their students how they figured out the difficult words. "I looked at the pictures" became an increasingly common response.

Book walks proved to be an effective way to increase student vocabulary and to encourage the use of picture cues. This was especially effective for students whose first language was a language other than English. These students benefit greatly from pre-reading lessons that build vocabulary.

During independent reading times, students did not always do a complete book walk on their own. That is, they did not always start at the beginning and preview the entire book. However, we did notice students studying illustrations before attempting to read a new page.

Book walks are easily implemented into any program involving small group instruction. No special materials are needed. Depending on the length of the book and the language skills of the students, book walks can be done quickly, or they may use a large chunk of the teacher's time with the group. The teachers felt that if the book walks required a substantial amount of time with some groups, it was an indication that the students needed the time to build the vocabulary they would need to read and comprehend the test. We encourage teachers to be flexible, and to plan according to their students' instructional needs.

Cross-checking lessons taught students to use the text to help them make guesses at unfamiliar words. At the beginning of our intervention, we found that when the entire word was covered, many of the guesses made by the students did not make sense in the text. We found that in many cases we had to ask, "Do you think that guess makes sense in this sentence?" The teachers would then model the strategy of reading the sentence with the guess inserted. In these instances we observed that for the most part the peers were supportive of each other, and there was very little teasing or ridicule. Both teachers agreed that this was due in part to the cooperative learning atmosphere established in the classrooms. These students had become accustomed to working together to achieve a common goal. After approximately one and a half weeks, the students began to make more accurate guesses.

At the start of the intervention period, each cross-checking lesson ranged from 30 to 45 minutes. Although we were confident that these were valuable lessons, we were becoming concerned about the time they were taking to complete. With the improvement of students' phonetic skills and their awareness of common rimes, the lessons were completed in shorter time frames. At the end of the intervention period, the lessons lasted approximately 20 minutes.

During the course of the intervention we met informally to reflect on what we were teaching and observing in our classrooms. As is the case during "normal circumstances," one of our main concerns was time. Fitting our interventions into a day already filled with other content areas to "cover" was challenging at times. We were motivated though, by the gains we observed our students accomplishing. We began the intervention period confident that we had thoroughly researched the topic of improving reading skills.

Increasing the students' reading strategies appealed to us as an intervention to implement. We were enthusiastic about the intervention because our research supported it, and our students demonstrated a need for it. As a result of our enthusiasm, our students were enthusiastic.

Our data indicate improvement of reading skills, but it does not reflect the changes of students' attitudes towards reading. Based only on our informal observations, we claim that students' attitudes did improve. We saw this in their eagerness to seek out a specific book during library time. They became engaged in books during silent reading periods. They applied the strategies when reading textbooks. They recommended "good reading" to classmates. They became successful readers. Success can be a great motivator, and we watched our students become motivated by their own success.

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Appendices

Appendix A
Informal Phonics Inventory

Informal Phonics Inventory

Name _____Grade_____Date_____

CONSONANTS

Auditory

The teacher produces the sound. The child names the letter that stands for the sound he/she hears. Circle those he/she does not know.

v b s n z g r k l d q f h c t m w y j p x

Visual

Ask the child to produce the sound for each small letter on the text card. Circle those he/she does not know.

k h s w r d p c m z g f l n t q y b j v x

CONSONANT DIGRAPHS

Auditory

The teacher produces the sound. The child names the letter. Circle those he/she does not know.

sh th ch wh

Visual

Ask the child to produce the sound shown on the card. Circle those he/she does not know.

th wh sh ch

CONSONANT CLUSTERS

Auditory

The teacher produces the sound of the cluster. The child names the letters that stand for the sound. Circle those he/she does not know.

gl pr dr pl tr sw sl fr bl cr st fl br gr cl sn

Visual

Ask the child to produce the sound shown on the card. Circle those he/she does not know.

gl pr dr pl tr sw sl fr bl cr st fl br gr cl sn

SHORT VOWELS

Auditory

The teacher produces the short vowel sound and the child names the letter that stands for the sound. Circle those he/she does not know.

o i a u e

Visual

Ask the child to read the nonsense word on each card. Circle those he/she does not know.

hif tob pud lem ras

LONG VOWELS

Auditory

Ask the child what vowel sound he/she hears in these words. The teacher pronounces the word as the child listens. Circle those he/she does not know.

eat ape use ice old

Visual

Show the child these nonsense words. Ask what sound the vowel would have in each of the words. Circle those he/she does not know.

pate glede swite tode dupe

STRATEGIES CHECKLIST

STUDENT:	
1. Cross-checking	
2. Sounds out each phoneme	
3. Picture cues	
4. Skip and go back	
5. Onsets and rimes	
6. No attempt made	

Appendix C
Making Words Lesson

LETTERS: a, b, c, h, m, s, t

RIMES ADDRESSED: at, ash

MAKE: sat

mat

cat

hat

bat

bash

cash

mash

rash

rat

chat

*Practice writing the words on individual dry erase boards.
*Select a word to be printed on an index card and to be placed on the bulletin board.
*Write words made and any others containing the same rime in I Spy books.

Appendix D
Spell Check Word List

1. SAT
2. FAT
3. CHAT
4. BASH
5. MASH
6. TRASH
7. MAP
8. CAP
9. TRAP
10. MAN
11. PAN
12. PLAN

Appendix E
Cross Checking

1. Every week my brother has to take out the **trash** and I have to cut the grass.

2. We set a **trap** because we thought a mouse was in our house.

3. My sister wanted to **chat** with me, so she called me on the telephone.

4. I had a **rash** and we thought I had the chicken pox!

5. You should always wear a helmet in case you **crash** on your bike.

* Words in **bold** print are to be covered with paper.

Appendix F
"I Spy" Worksheet

Highlight the ash chunks.

1. I hope you don't crash on your new bike.
2. Did you see that flash in the sky?
3. I like to mash potatoes and eat them.
4. Sometimes when you hide something you can call it your stash.
5. Do you like hash brown potatoes?
6. During gym you will run the 50-yard dash.
7. My friend's name is Nash.
8. If you walk through poison ivy, you may get a rash that itches.
9. A great big party is called a bash.
10. My job at home is to take out the trash.